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FIRST-TOUR ATTRITION: IMPLICATIONS FOR POLICY AND RESEARCH

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Current high levels of early personnel attrition are costly to the Army in terms of both recruiting and training requirements. This paper reviews state-of-the-art developments in research on attrition across the services.

Past research has characterized the causes of attrition as (1) within the individual who is discharged, (2) in the nature of the organization's policies and practices, or (3) different factors at different times during first enlistment. Consistent links have been found with individuals' characteristics.

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such as age and education, and with organizational policies. Future research should define and evaluate procedures for effective management of attrition. Specific research should be focused on areas where existing research seems to apply to policy. For example, attrition prediction tools may be applied to influence the Army's accession policies, or research findings may be utilized for developing training programs for line supervisors or may suggest ways of controlling attrition timing and tradeoffs during first enlistment.

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FOREWORD

Despite major advances in selection, classification, and training, the Army has experienced increasing rates of attrition among entering volunteers. Although this trend has moderated somewhat among those entering in FY 75 and FY 76--the most recent years for which we have complete data--first-tour attrition continues to be one of the major problems in manning the force during the 1980's.

The Army Research Institute (ARI) initiated the research of which this report is a part to examine the attrition occurring after basic training or the first six months of service. It was begun in the Personnel Utilization Technical Area of ARI, under the direction of Dr. M. A. Fischl, and subsequently transferred to the ARI Field Unit at Fort Benjamin Harrison, Indiana, under the direction of Dr. D. Bruce Bell. The research was funded under Army Project 2Q162717A766 in FY 77 and FY 78, was responsive to the stated needs of the Enlisted Division of the Military Personnel Management Directorate of the Deputy Chief of Staff for Personnel (DCSPER), U.S. Army. This report reviews the state-of-the-art of attrition research as it relates to both researchers and policy makers.

The project was conducted under contract DAHC19-77-C-0041 by the Advanced Research Resources Organization (ARRO); the principal investigator, Dr. Goodstadt, subsequently has joined Westat, Inc. Special thanks are due to the Defense Manpower Data Center (DMDC) for assistance in generating the statistics in Chapter Three.

JOSEPH ZEIDNER
Technical Director

FIRST-TOUR ATTRITION: IMPLICATIONS FOR POLICY AND RESEARCH

BRIEF

Requirement:

To review recent and ongoing attrition research within the Army and other services to identify what is known and how this knowledge might affect policy, and to point to where research should be directed.

Procedure:

Information on factors associated with attrition and on projects currently underway was gathered from written reports and from scientists within DoD or under contract with DoD agencies. The Defense Manpower Data Center (DMDC) provided data on attrition rates across the services for FY 1972 thru FY 1975.

Findings:

All four services experienced a rapid increase in attrition among those entering in FY 74 compared to those entering in FY 72 (the last year of the draft). This trend moderated somewhat among the label "Failure to meet minimum behavioral or performance criteria" accounted for an increasing proportion of Army attrition among those entering in FY 75 compared to FY 72. Both an increase in non-high school graduates and changes in separation policies (i.e., the advent of marginal performer programs) seemed responsible for these changes in attrition.

In all four services, research has shown consistent links between characteristics of individuals (e.g., age, test scores, education, and biographical and experience factors) and attrition. These types of individual differences suggest that attrition can be reduced through adjusting entry standards. Attrition can also be reduced through changes in organizational factors such as working conditions, leadership styles, and living conditions.

Future research should emphasize defining and evaluating procedures for more effective attrition management. Specifically, attrition R&D should focus on eight areas in which existing research appears to have policy applicability:

1. Attrition prediction tools may be applied to influence the Army's accession policies.

2. Predictive devices may be used for early identification of soldiers to be assigned to remediation programs.

3. Findings from studies of organizational factors in attrition may be used to develop programs and policies for alleviating conditions having counter-productive effects upon personnel.

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4. Findings from research may be utilized for developing training programs for line supervisors.

5. Research may suggest interventions directed at controlling discharge authority and/or resources available to unit commanders.

6. Available research evidence may be used to design programs for developing coping skills among enlisted personnel at critical junctures in the first enlistment.

7. Findings from ongoing and recently completed research may suggest ways of amortizing training and recruiting investments through more effective use and assignment of personnel.

8. Research may suggest ways of controlling the timing of attrition and tradeoffs inherent in attrition at different points in the first enlistment.

Utilization of Findings:

The suggestions for areas of further research have already been used to guide on-going research.

FIRST-TOUR ATTRITION: IMPLICATIONS FOR POLICY AND RESEARCH

CONTENTS

	Page
EXECUTIVE SUMMARY	1
CHAPTER 1--INTRODUCTION	6
CHAPTER 2--METHODOLOGY	9
REVIEW OF ATTRITION RESEARCH SUMMARIES	9
GATHERING OF COMPLETED REPORTS OF ATTRITION RESEARCH	9
CONTACTS WITH INDIVIDUAL INVESTIGATORS	10
CHAPTER 3--RECENT TRENDS IN ARMY ATTRITION	12
INTRODUCTION	12
MAGNITUDE OF ATTRITION IN ALL SERVICES	12
CATEGORIES OF ATTRITION LOSSES	14
WHEN ATTRITION OCCURS	15
SUMMARY	20
CHAPTER 4--ANALYSIS OF RECENT AND ONGOING ATTRITION RESEARCH	21
HYPOTHESIS THAT CAUSES OF ATTRITION RESIDE WITHIN THE INDIVIDUAL	22
Relevant Recent and Ongoing Research	22
Implications for Attrition Management Policy	26
HYPOTHESIS THAT CAUSES OF ATTRITION RESIDE IN ORGANIZATION POLICY AND PRACTICE	27
Relevant Recent and Ongoing Research	27
Implications for Attrition Management Policy	32
HYPOTHESIS THAT ATTRITION AT DIFFERENT POINTS IN TIME IS A FUNCTION OF DIFFERENT FACTORS AND CONDITIONS	33
Relevant Recent and Ongoing Research	34
Implications for Attrition Management Policy	36

Page

CHAPTER 5--IMPLICATIONS FOR ATTRITION RESEARCH AND DEVELOPMENT ACTIVITIES 37

RECOMMENDATIONS FOR FUTURE ATTRITION R&D 38

R&D to Develop Near-Term Attrition Management Techniques 40
R&D to Develop Long-Term Attrition Management Policies and Procedures 45

SUMMARY 51

REFERENCES 52

FIGURES

Figure 1. Attrition loss in each military branch during 3 years in service for non-prior service enlisted males entering in FY72, FY73, FY74, and FY75 accession cohorts 13

2. Percentage of attrition loss in each military branch due to "Failure to Meet Minimum Behavioral or Performance Criteria" during 3 years in service for non-prior service enlisted males entering in FY72, FY73, FY74, and FY75 accession cohorts 16

3. Percentage of Army accession cohort loss due to "Failure to meet Minimum Behavioral or Performance Criteria:" in 6-month length of service blocks by FY72-FY75 cohort accessions 18

4. Percentage of Army accession cohort loss due to "Failure to Meet Minimum Behavioral or Performance Criteria:" by 6-month length of service blocks for FY72-FY75 cohort accession 19

TABLE

Table 1. SEPARATION REASONS ENCOMPASSED IN ISC CATEGORY: "Failure to Meet Minimum Behavioral or Performance Criteria" 17

EXECUTIVE SUMMARY

Background

Since the introduction of the All Volunteer Force, the services have focused a great deal of attention and resources on the problem of attracting and retaining sufficient numbers of qualified personnel. For AVF to succeed, there is a critical need to manage problems of retention, particularly exceptionally high rates of early personnel attrition. Attrition is costly for several reasons. First, attrition represents unrewarded organizational investments in training and recruiting. Second, attrition imposes long-term costs in terms of veteran's benefits. Third, attrition drives up accession requirements; requirements that will be increasingly difficult to fulfill in the tight manpower pool forecast for the 1980's.

During the past several years each of the services has made investments in research designed to understand the factors that drive attrition and to identify options for attrition management. The purpose of this paper is to review recent and ongoing research on attrition within the Army and in the other services to:

1) identify gaps in knowledge of attrition determinants
2) pinpoint alternative attrition management strategies suggested by recent research, and
3) outline directions and priorities for future attrition research.

Methodology

To gather background materials and research reports for this effort several activities were undertaken. These included:

- Attrition research summaries developed by investigators and by military laboratories were reviewed.

- A computerized literature search was carried out through the National Technical Information Service (NTIS).

- Technical reports were obtained from various DOD laboratories and contractors.

- Telephone and personal contacts were made with investigators in different laboratories and research organizations.

- Information on attrition rates across the services was obtained from the Defense Manpower Data Center for FY72, 73, 74, and 75 accession cohorts.

Findings Concerning Recent Trends in Military Attrition

To place the research review in proper perspective, DMDC cohort data were examined across the services. This analysis focused on enlisted accessions from FY72 which reflect draft-era as well as AVF manpower experience. The data reveal the following:

- Each of the services experienced a rapid increase in attrition across the FY72, 73, and 74 cohorts.

- Losses moderated somewhat with the FY75 cohort.

- The Army, Navy and Marine Corps experienced losses of similar magnitude during this period.

- Air Force attrition was lowest of the four services.

Several explanations were offered to account for these results:

1) In response to the absence of the draft, signficant changes were made in accession requirements (e.g. test scores, medical standards etc.).

2) The services recruited an increasing proportion of non-high school graduates in FY72, 73 and 74.

3) The services initiated marginal performer programs which streamlined administrative discharge processes.

Data reflecting reasons for separation revealed:

- "Failure to meet minimum behavioral or performance criteria" accounted for an increasing proportion of attrition across FY72 through FY75 cohorts in the Army.

- Between FY72 and FY75 an increased percentage proportion of early Army attrition (first six months of service) occurred, attributable to "Failure to meet minimum behavioral and performance criteria."

This report suggests that this pattern of attrition in the Army may be explained in terms of the implementation of the Trainee Discharge Program and the Expeditious Discharge Program during FY74 as well as the increasing proportion of non-high school graduates entering the Army.

Findings From Recent and Ongoing Attrition Research

In the course of reviewing the literature, it became apparent that attrition research has served to examine three alternative hypotheses concerning factors that influence attrition:

1) Individual background factors are strongly associated with premature separation from the service.

2) Organizational conditions, policies and practices may be linked with attrition.

3) Attrition occurring at different points in the first enlistment is a function of different factors and conditions.

The role of individual background and capabilities. Findings from studies carried out in all four services reveal that a number of individual difference variables (such as age, test scores, education level, biographical and experience information) are linked with attrition. There appears to be a high degree of consistency in findings across the services. In general terms, individual difference variables appear to account for approximately 10% to 25% of the variance in attrition.

The role of organizational conditions, policies, and practices. Existing research in this area suggests that there are two mechanisms through which organizational factors may influence attrition:

1) At the individual level, organizational conditions (e.g. working conditions, leadership, disconfirmed expectations, quality of lifestyle and living conditions) may adversely impact on the attachment of enlisted personnel to military organizations, thereby making attrition more likely.

2) Unit level management may influence attrition through the application of discretion in command discharge decision-making.

The bulk of research to date has focused on the first of these mechanisms. Current work in the Army and in the Marine Corps is focused on the second of these mechanisms.

Factors influencing attrition at different points in time. Work in this area to date has been quite limited. Available findings from studies in the Army, in the Navy, and in the Marine Corps suggests that early expectations, early service experience, and various personal characteristics of enlisted personnel play important roles in attrition at different stages of the enlistment.

Implications for Attrition R & D

Based upon the review of recent and ongoing research, this report recommended that attrition research and development needs to move from a focus on the causes of attrition to greater emphasis on defining and evaluating attrition management strategies. In order to enhance the potential for application of research findings in the policy arena, a further recommendation was made that emphasis be placed on systematic development of policy experiments. Such experiments can provide

researchers with strong empirical rationale for policy development and change.

In specific terms, eight areas for future attrition R & D were pinpointed. These recommended areas for R & D investments encompass the following developments:

1) Programs to provide early identification of attrition-prone individuals to permit timely participation in remedial programs.

2) The development of training programs focused on attrition-inducing leadership practices.

3) The development of unit level attrition management programs designed to reduce reliance upon discharges as a solution to personnel problems.

4) The design of programs to provide first-term enlisted personnel with adequate coping skills to meet the demands of the first permanent assignment.

5) Research is needed to define more optimal accession policies, including innovations in recruiting and screening procedures. These procedures would change the mix of personnel and thereby alter the attrition rate.

6) Research is needed to develop means for alleviating organizational and occupational conditions that lead to attrition.

7) Research is needed to identify potential mechanisms for "amortizing" training and recruiting investments.

8) Research on the timing inherent in retention/discharge policies is needed to define a more optimal timetable for attrition.

The rationale underlying these recommendations is the assumption that no <u>one</u> program or policy will be sufficient to effectively manage attrition; attrition is a systems problem that requires a systems solution. As a result, recommendations for R & D investments fall into a number of different areas and focus on the problem from several different perspectives.

CHAPTER 1

INTRODUCTION

During the six years that have elapsed since the introduction of the All-Volunteer Force, the armed services and the Congress have devoted considerable attention to the operational problems and costs associated with attracting and retaining sufficient numbers of qualified personnel (cf. Cooper, 1977; DOD Report on the All-Volunteer Force, 1978). Taken together with forecasts of a declining pool of male eligibles in the 1980's, manpower issues will continue to represent a major focus of attention for the Defense establishment.

It is clear, that for the AVF to succeed, the services need to manage problems of retention, particularly serious deficiencies that have emerged in the form of exceptionally high rates of personnel attrition. Recent Army data, for example, indicate that nearly forty percent of entering recruits were discharged prior to the end of their active duty obligated service. These high rates of loss are costly not only from the standpoint of unrewarded organizational investments in training, recruiting, and long-term impacts on veterans benefits (GAO, 1979); high attrition rates also drive up accession requirements, thereby forcing the Army to compensate for losses through further increases in recruiting. In the face of a declining manpower pool, and without a reduction in accession requirements or a relaxation of physical standards, recruiting for the 1980's will likely provide greater numbers of higher-attrition-risk personnel (i.e. lower quality personnel) which may further exacerbate the Army's retention problems.

The services have for some time attempted to control the extent and/or the timing of attrition through the development of screening devices and through marginal performer programs that provide unit commanders with the discretion to grant early discharges to persons having difficulties adjusting to service life. It is evident, however, that such mechanisms are not by themselves sufficient for systematic and cost-effective management of premature personnel loss.

To provide policymakers with a more clear-cut understanding of factors that drive attrition and of policy options potentially available for attrition management, a number of research projects have been undertaken in the Army and in the other services to examine the determinants of first-term attrition. Along with these research initiatives have been a series of papers (Goodstadt & Glickman, 1975; Kissler, in preparation) that have attempted to integrate and provide broad gauge perspectives concerning military attrition research. Work has also been undertaken to review civilian literature on personnel turnover (Hand, Griffeth, & Mobley, 1977) and to define its relevance for military attrition. Finally, a conference of attrition researchers was convened (Sinaiko, 1977a, 1977b) to stimulate interest in military attrition problems. The objective of this activity has been to highlight methodological and conceptual concerns relating to the attrition phenomenon and to distill directions for future research in the area.

While the results of these efforts has amply served to organize a research agenda and to illuminate various causes and determinants of attrition that require investigation, earlier integrative activities have been less successful in terms of directly influencing policies designed to manage attrition. This is to be expected, however, since the identification of causal determinants of problems does not necessarily define the best solutions that may be applied to alleviate problems.

For example, a common finding in the literature indicates that non-high school graduates are more likely to receive early discharges. Such a finding, however, may lead to several alternative policy actions to address the problem. First, manpower managers may decide to tighten accession requirements and thereby limit the number of non-high school graduates who enter the service. This in turn would lead to a decline in loss rates. Second, the policymakers may attempt to upgrade the skills of managers who must deal with non-high school personnel, thereby leading to reduced attrition. As reflected in this example, any particular finding regarding attrition determinants may lead to multiple alternatives for management action. Unfortunately, research has not as yet provided clear guidance as to which policy options hold greatest promise.

Given the gravity of attrition problems facing manpower planners, there is a need to more clearly focus state-of-the-art research knowledge on the development and analysis of alternative attrition management strategies. The purpose of this paper is to review recent and ongoing research within the Army and other services in order to:

1) identify gaps in knowledge of attrition determinants
2) pinpoint alternative attrition management strategies suggested by recent research
3) outline directions and priorities for future attrition research

Chapter 2 of the report outlines the procedures and sources used for reviewing recent research on attrition. Chapter 3 serves to highlight various aspects of attrition as reflected in recent manpower data. Chapter 4 provides a detailed analysis of research findings from investigations of attrition in the Army and in other services. Finally, Chapter 5 describes near-term and long-range priorities for policy-related attrition research.

CHAPTER 2

METHODOLOGY

To gather background materials and research reports for review in this effort, a number of activities were undertaken. First, several papers summarizing attrition literature were examined. Second, a computerized literature search was initiated and available reports of completed research and attrition data were assembled. Third, contacts were made and discussions were held with investigators in various DOD laboratories, in contract organizations and in other institutions.

REVIEW OF ATTRITION RESEARCH SUMMARIES

A number of attempts have been undertaken during the last few years to synthesize the literature on attrition. In the course of this effort, we examined the following published documents:

- A review of the current status of Navy and Marine attrition (Goodstadt & Glickman, 1975).
- Reports of proceedings and policy implications of the 1977 Conference on First Term Enlisted Attrition (Sinaiko, 1977a, 1977b).
- A review of relevant research literature on civilian turnover and military retention (Hand, Griffeth, & Mobley, 1977).
- A Navy review of military attrition that served to develop a framework for R&D (Kissler, in preparation).

In addition, we examined internal ARI documents summarizing ongoing in-house and contract research efforts.

GATHERING OF COMPLETED REPORTS OF ATTRITION RESEARCH

Through contacts with different Department of Defense laboratories and individual investigators, a number of research reports were assembled. These included efforts funded by:

- Army Research Institute
- Office of Naval Research
- Navy Personnel Research and Development Center
- Headquarters, U.S. Air Force
- Department of Defense

The reports encompassed various contractor and in-house research studies and papers. In addition, a computerized literature search was undertaken on the subject of attrition in the military in the National Technical Information Service (NTIS) data base to cross-check the completeness of the literature gathered from other sources. No previously uncovered documents of relevance to this investigation were found.

Finally, contact was made with the Defense Manpower Data Center (DMDC) to obtain information on attrition rates across the different services and over time. This data is reported in Chapter 3 (Recent Trends in Army Attrition) to provide the reader with a context for the review of recent and ongoing attrition research and implications for attrition research and development activities which are presented in Chapters 4 and 5.

CONTACTS WITH INDIVIDUAL INVESTIGATORS

To follow up review of particular documents, telephone or personal contacts were made with investigators in different laboratories and research organizations. These discussions focused on one or more of the following topics:

- Specific findings and/or methodology of particular investigations;
- Assumptions concerning the causes of attrition and its management;
- Planning for future attrition research.

These discussions were undertaken with investigators in the following institutions:

- Army Research Institute
- Office of Naval Research
- Navy Personnel Research and Development Center
- Office of the Assistant Secretary of Defense (Manpower, Reserve Affairs and Logistics)
- General Accounting Office
- Chief of Naval Education and Training (TAEG)
- Smithsonian Institution
- University of South Carolina

The results of our review and these discussions are presented in Chapter 4 (Review of Recent and Ongoing Attrition Research) and in Chapter 5 (Implications for Attrition Research and Development Activities).

CHAPTER 3

RECENT TRENDS IN ARMY ATTRITION

INTRODUCTION

There has been an increasing concern on the part of the military with rising rates of attrition being experienced among first term enlisted personnel. Sinaiko (1977b) points out that while military attrition is not a new phenomenon, the rate of attrition has increased significantly since the advent of the All-Volunteer Force. This chapter examines data on first term enlisted attrition to depict the magnitude of the attrition phenomenon in each of the services. Particular attention is given to attrition being experienced by the Army; patterns and types of personnel loss in the Army are highlighted. The purpose of this chapter is to provide the reader with a context for understanding the direction and subsequent findings of recent research on military attrition which are discussed in Chapter 4 of this report. It is also hoped that the analysis will provide attrition researchers and policymakers with information useful in formulating directions for future efforts at understanding and managing attrition.

MAGNITUDE OF ATTRITION IN ALL SERVICES

An analysis of attrition data for first term enlisted personnel accessions from FY72 through FY75[1] reveals that each branch of the military has been experiencing a rise in its rate of first term attrition. Figure 1 shows that in each service branch the rate of cohort attrition increased steadily from FY72 to FY74, then dropped below FY74 levels for accession cohorts which entered service in FY75. Army attrition losses totalled approximately 28 percent of the FY72 accession cohort.

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[1]Data analyzed here were obtained from the Defense Manpower Data Center (DMDC) Cohort File. This file contains a compilation of attrition data from each service's individual loss file to allow a cross-service comparison of attrition losses. Data on non-prior service enlisted males in accession cohorts entering service in FY72, FY73, FY74 and FY75 were chosen for analysis so that accessions entering service just prior to, and just following the advent of the All-Volunteer Force would be represented. In addition, these accession cohort years were selected because they represent the most recent, complete picture of cohort attrition.

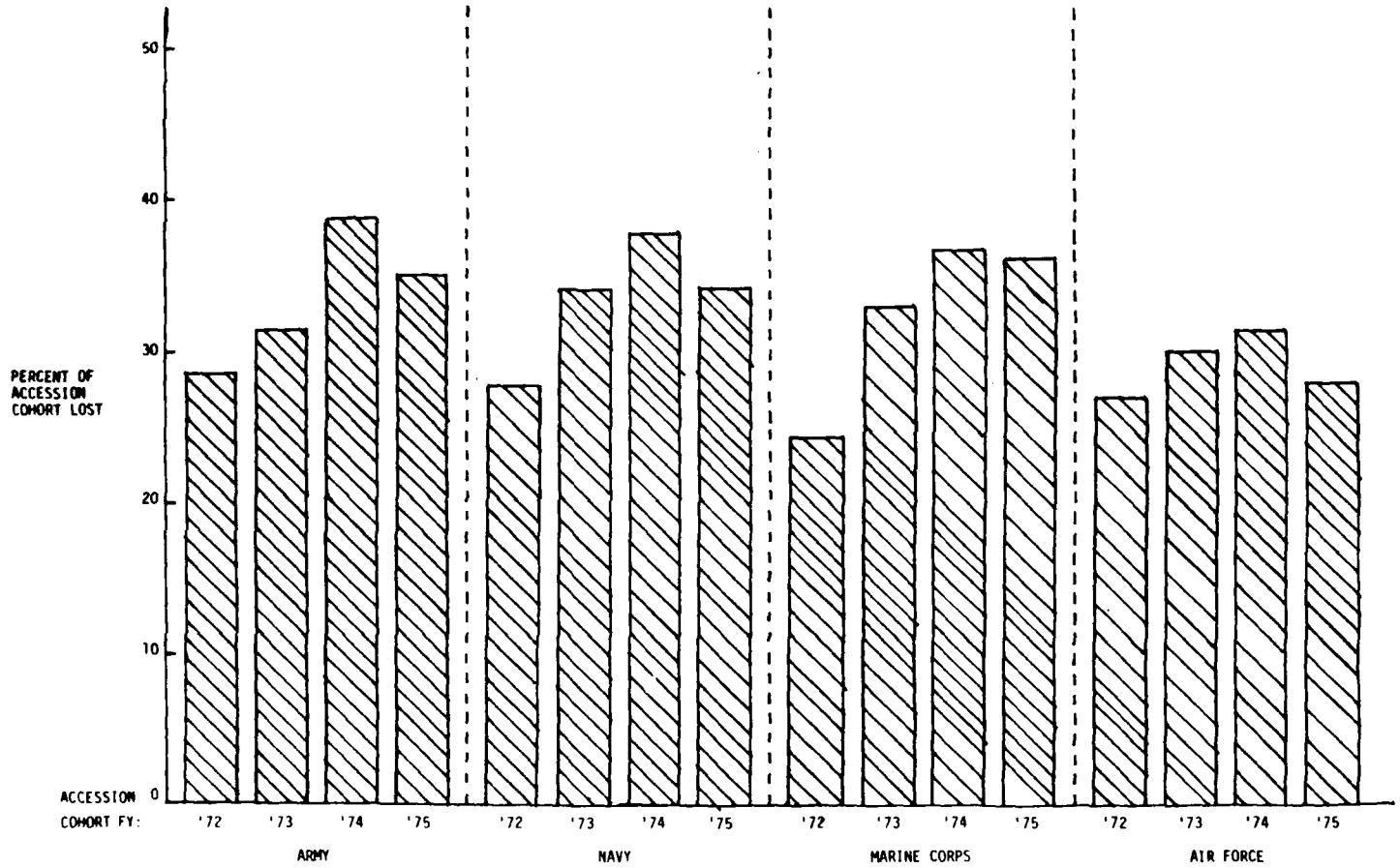

Figure 1. Attrition loss in each military branch during 3 years in service for non-prior service enlisted males entering in FY72, FY73, FY74, and FY75 accession cohorts.

Almost 40 percent of enlisted personnel entering the Army in FY74 were separated before the end of their term of enlistment. In FY75, Army losses fell below those experienced in FY74 to 35 percent of the entering cohort. As can be seen in Figure 1, the Navy and Marine Corps losses over the same period (FY72-FY75) were very similar to losses in the Army. While attrition in the Air Force also rose between FY72 and FY74, the differences between cohorts were not as marked as in the other services.

In summary, for the years analyzed, each service branch experienced its lowest level of losses in FY72 and its greatest attrition losses in FY74.

It should be noted that the upswing in attrition losses during this period (FY72-FY74) occurred during a period in which the draft ended and the All-Volunteer Force became fully operational. During this period for example, accession requirements were altered, the nature of entering cohorts changed (Cooper 1977), and marginal performer programs were instituted in the Army, Navy and Air Force (DOD, 1978). All or some of these factors may account for an increase in attrition rates during this period.

CATEGORIES OF ATTRITION LOSSES

Attrition shown in Figure 1, represents losses of enlisted personnel due to a variety of reasons.[2] Included in the totals are personnel who failed to complete their term of enlistment for medical reasons, those who were granted hardship or dependency discharges, those who entered officer programs, those who died, and finally, those who failed to meet minimum behavioral or performance criteria.

An analysis of attrition by reason for the loss shows that more than one half of the personnel losses for each entering cohort was

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[2]The DMDC Cohort File, categorizes reasons for attrition losses by compiling individual service separation codes into Interservice Separation Codes (ISC) to allow cross service research comparison of separation reasons. The ISC categories are used in this report to designate the nature of the attrition loss.

attributed to a "Failure to Meet Minimum Behavioral or Performance Criteria" (FMMBPC). Figure 2 shows the proportion of attrition loss due to a FMMBPC for each entering cohort accession in all four military branches. Attrition losses in this category include separations of "problem" personnel and personnel discharged under the services' marginal performer programs.[3] Table 1 lists reasons for separation subsumed under this category. Losses in this category are particularly noteworthy for two reasons. First, they comprise the bulk of attrition and second, unlike losses due to death, for example, losses resulting from a failure of personnel to meet minimum behavioral or performance criteria may be influenced by personnel policies and attrition management techniques.

In the Army, about 66 percent of the FY72 accession cohort attrition losses (almost 19 percent of the cohort) were attributed to a FMMBPC. As can be seen in Figure 2, FY73 and FY74 accession cohort losses due to a FMMBPC made up about 70 and 80 percent respectively of the attrition loss. (For FY73 accessions, this loss represented about 22 percent of the cohort; for FY74 accessions, 31 percent of the cohort.) Approximately 82 percent of the overall attrition loss in the Army's FY74 cohort (about 29 percent of the cohort) received this designation. Each of the other services show similarly high percentages of attrition losses due to FMMBPC.

WHEN ATTRITION OCCURS

As we have already shown in Figure 2, attrition owing to FMMBPC comprises more than half of the attrition loss for each entering cohort in each branch of the military between FY72 and FY75. In the Army's FY74 and FY75 cohort accessions, it accounts for more than 80 percent of the attrition totals.

Figures 3 and 4 provide a close look at the pattern of FMMBPC attrition in the Army as it occurs at different points in time during

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[3] Although it would be more informative to the reader to make a distinction between personnel separated under marginal performer programs versus others in this category, data collection and coding procedures used during the early years of such programs (which include accession cohort years analyzed in this report) do not make it possible to accurately make such a distinction.

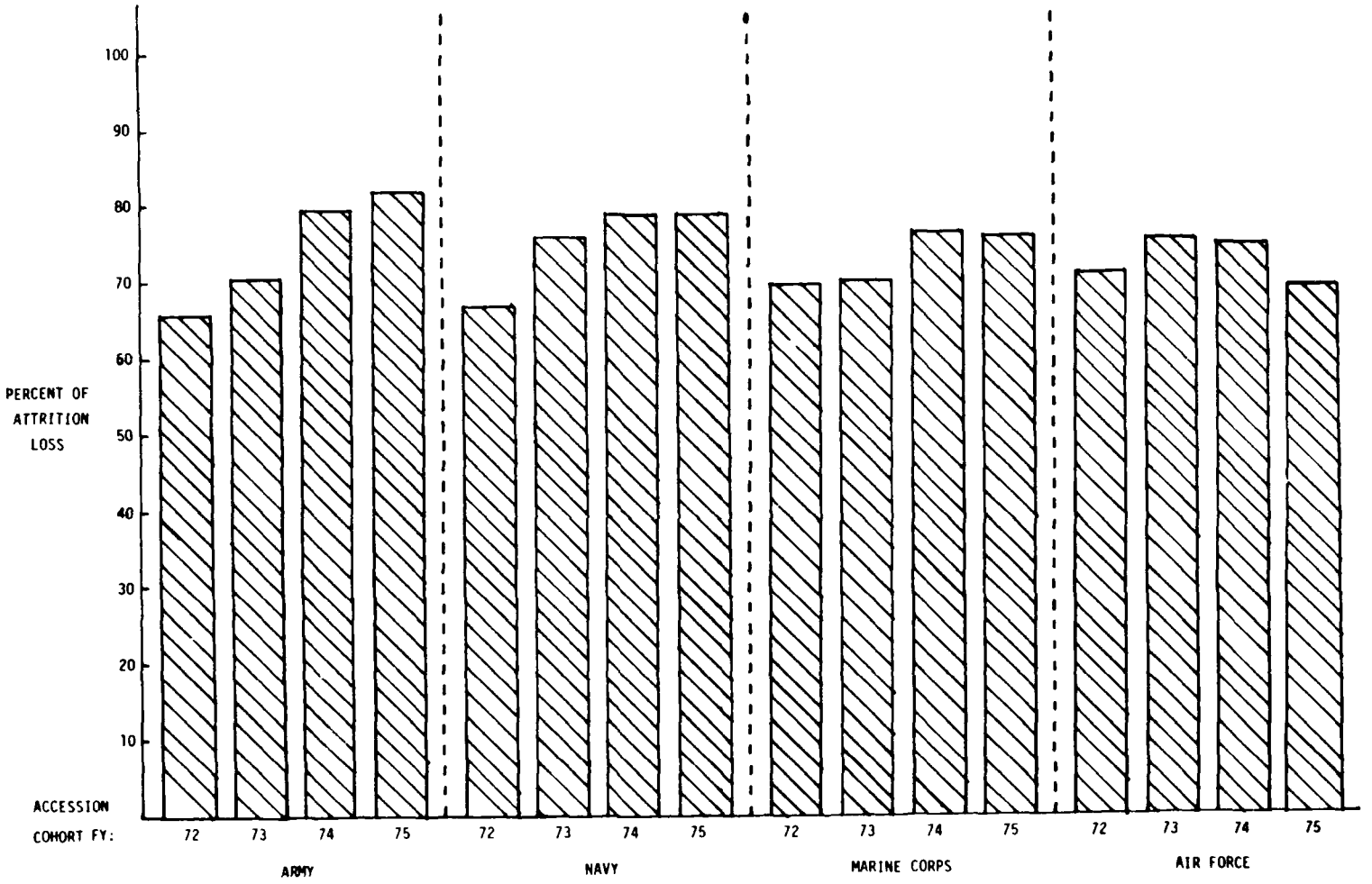

Figure 2. Percentage of attrition loss in each military branch due to "Failure to Meet Minimum Behavioral or Performance Criteria" during 3 years in service for non-prior service enlisted males entering in FY72, FY73, FY74, and FY75 accession cohorts.

TABLE 1

SEPARATION REASONS
ENCOMPASSED IN ISC CATEGORY:

"Failure to Meet Minimum Behavioral or Performance Criteria"

Character or Behavior Disorder
Motivational Problems
Enuresis
Inaptitude
Alcoholism
Discreditable Incidents--
  Civilian or Military
Shirking
Drugs
Financial Irresponsibility
Lack of Dependent Support
Unsanitary Habits
Civil Court Convictions
Security
Court Martial
Fraudulent Entry
AWOL, Desertion
Homosexuality
Sexual Perversion
Good of the Service
Juvenile Offender
Misconduct (Reason Unknown)[1]
Unfitness (Reason Unknown)[1]
Unsuitability (Reason Unknown)[1]
Basic Training Attrition
Failure to Meet Minimum
  Qualifications for Retention
Expeditious Discharge
Trainee Discharge

[1]Specific reasons for these discharge designations were not recorded.

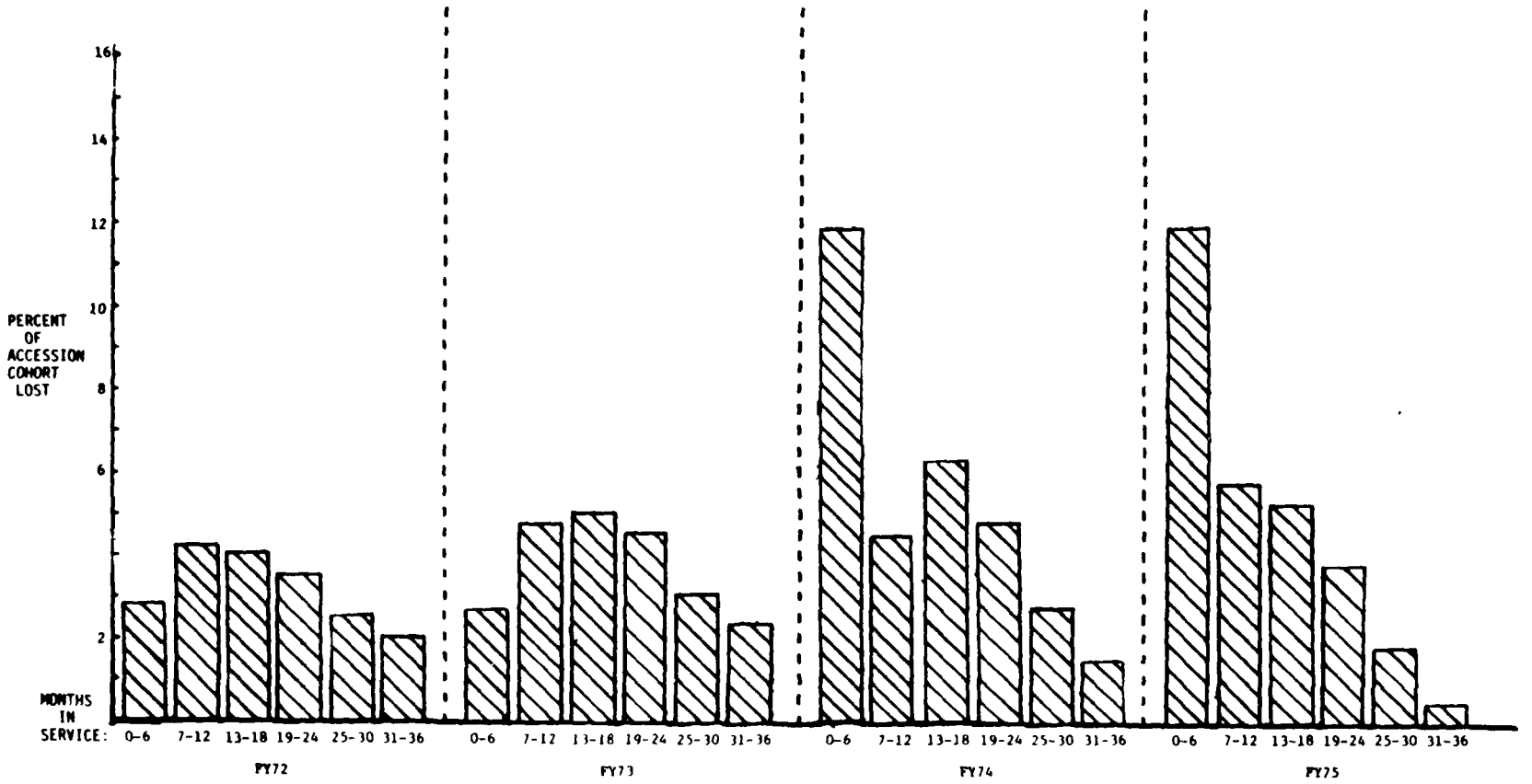

Figure 3. Percentage of Army accession cohort loss due to "Failure to Meet Minimum Behavioral or Performance Criteria:" in 6-month length of service blocks by FY72-FY75 cohort accessions.

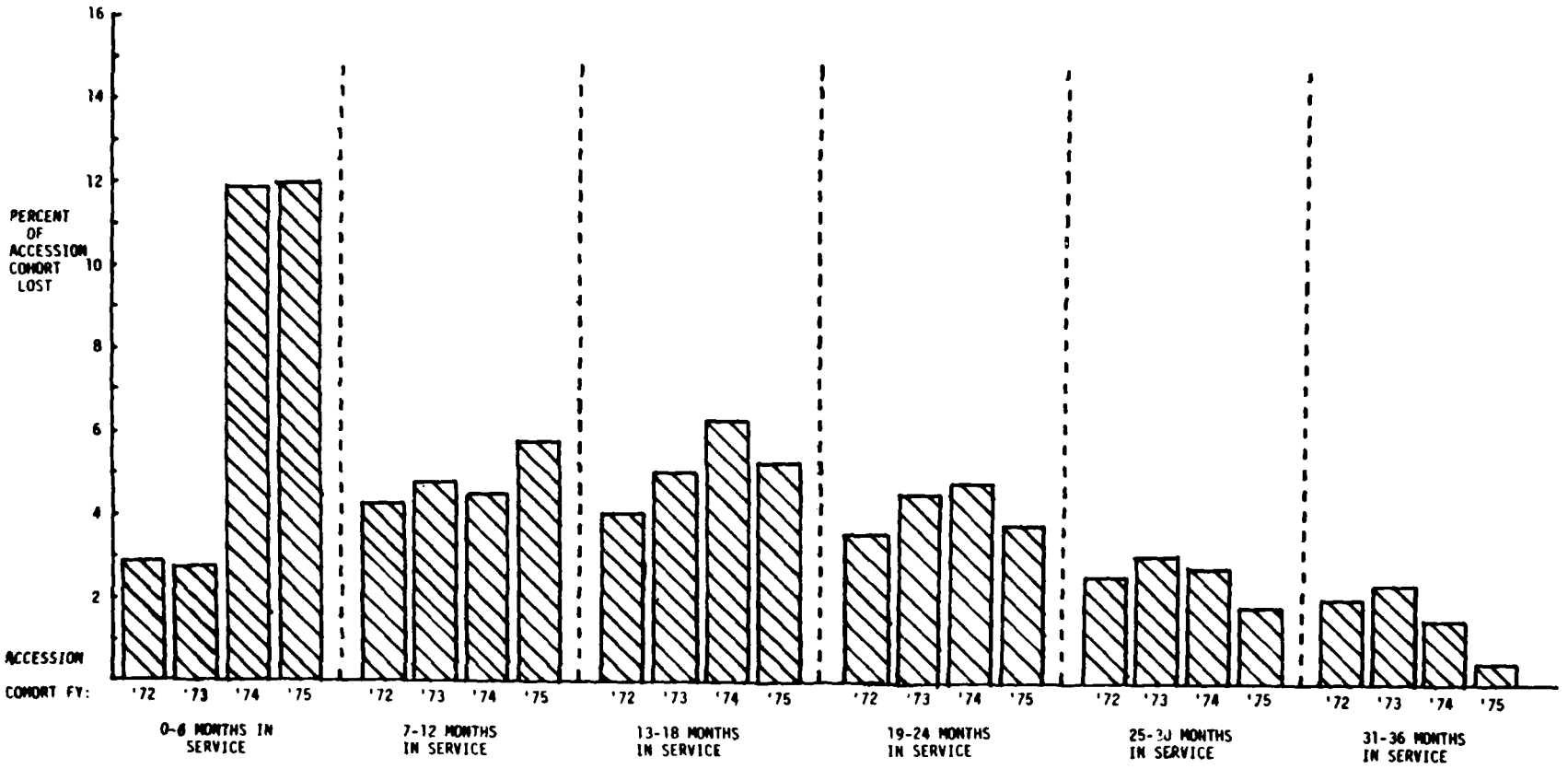

Figure 4. Percentage of Army accession cohort loss due to "Failure to Meet Minimum Behavioral or Performance Criteria:" by 6-month length of service blocks for FY72-FY75 cohort accessions.

the first term for FY72 through FY75 cohort accessions. As can be seen in Figure 3, the greatest percentages of Army cohort losses due to FMMBPC occurred between 7 and 24 months in service for cohorts entering in FY72 and FY73. For cohorts entering the Army in FY74 and FY75 this pattern changes dramatically. Approximately 3 percent of the cohort losses in FY72 and FY73 during the first 6 months in service were due to FMMBPC, whereas in FY74 and FY75 cohorts, approximately 12 percent of cohort losses during the first 6 months in service were for this reason.

As is shown in Figure 4, attrition losses owing to FMMBPC do not differ appreciably by cohort within length of service time periods following the first 6 months in service. The increased percentages of attrition due to FMMBPC occurring within the first 6 months of service for Army cohorts entering service in FY74 and FY75 may be due in part to a number of factors mentioned earlier as having possible impact on attrition rates. For example, changes in accession requirements, an increased percentage of non-high school graduates[4] entering the Army in FY74 and FY75 (Cooper 1977), and the institution of the Trainee Discharge Program in 1974 (DOD, 1978) may all have had some influence on these changes[5] in attrition rates.

SUMMARY

Data analyzed in this chapter for accession cohort years FY72 through FY74 point to an upward trend in attrition rates across the services; however, until complete data on attrition rates in successive cohorts is available, it is not possible to know if this trend will continue. In addition, until the forces which drive attrition are more clearly understood, it will not be possible to determine all the causes of attrition or to develop policies which effectively manage rates of attrition. Chapters 4 and 5 discuss recent research efforts to understand the attrition phenomenon and their implications for military policy.

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[4]Cooper reports that during the second half of FY73, 33% of accessions were non-high school graduates. In FY74, 51% of accessions and in FY75 43% of accessions were non-high school graduates.

[5]It should be recognized that changes in Army personnel management strategies may have accompanied changes in the quality of entering recruits which together affected attrition rates.

CHAPTER 4
ANALYSIS OF RECENT AND ONGOING ATTRITION RESEARCH

In the course of reviewing relevant research, discussing attrition problems with investigators across different services, and examining data and documentation concerning discharges, it readily became apparent that a number of factors have either been hypothesized or found to influence attrition. These factors include characteristics of discharged individuals (e.g., mental category, educational background, etc.) organizational policies and practices (e.g., the introduction of marginal performer programs and assignment and recruiting practices), as well as broad-gauge changes in society and its view of the military. As noted by Caplan and Nelson (1973), assumptions and hypotheses concerning the "causes" of organizational problems determine, in large measure, the nature of management solutions.

In attrition research, it is apparent that investigators have based their efforts on several differing hypotheses regarding the nature and causes of attrition, including:

- The "cause" of attrition resides within the individual, his/her background and capabilities[1]
- The "causes" of attrition lie in the nature of the organization, its policies, practices and conditions
- Hypothesis that attrition at different points in time is a function of different factors and conditions

Specific Army research projects have been predicated in whole or in part upon these hypotheses. In turn, the results and direction of these studies have implication for the development of attrition management policy. Particular studies based upon each of these hypotheses concerning attrition are described below.

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[1]In purely statistical terms attrition is not actually "caused" by the individual's background and capabilities; rather background factors serve as moderator variables such that persons with different backgrounds may be seen to have varying experiences and varying success rates in military manpower systems.

HYPOTHESIS THAT CAUSES OF ATTRITION RESIDE WITHIN THE INDIVIDUAL

Until quite recently, a prevalent hypothesis among military policy-makers was that individuals are discharged because they lack certain "qualities" or capabilities that permit them to adjust to military life and to be effective in their work or in combat. Thus, prevailing wisdom suggested that increasing rates of attrition were due to an influx of "poor quality" of troops (e.g. mirrored by such indices as low test scores, lack of high school diploma) who have a higher likelihood of being discharged. This hypothesis that the individual bears much of the "blame" for discharges served for some time as a guiding principle in attrition research (cf. Goodstadt & Glickman, 1975). This view is still held in some circles and has been the subject of considerable research in the services. A part of the research emphasis on individual characteristics undoubtedly rests on the fact that such characteristics are easily measured and personnel data banks afford rapid access to information on individual characteristics. In addition, research on individual characteristics linked to attrition was quite successful in early investigations of attrition, thereby leading to substantial and continuing work to identify background correlates of premature loss.

Relevant Recent and Ongoing Research

A number of recently completed and ongoing Army Research Institute investigations are focused on personnel characteristics that are related to attrition. These studies include the following:

- Autobiographical predictors of attrition. This work has developed a Military Application Profile, a 20 minute biographical questionnaire, scorable like a test, which research shows correlates 0.45 with 180-day attrition in several large samples.

- Development of Job Reading Task Tests. This project focuses upon test content drawn from reading tasks in Army field and technical manuals. The tests can ultimately be used for either screening out persons who do not possess sufficient literacy skills for Army training and jobs or for identifying persons requiring remedial reading assistance.

- Development of a Literacy Indicator from the ASVAB. This effort has derived several measures of reading ability from the ASVAB that may ultimately be used for predicting individual attrition.

- Development of a Cost-Effective Test Compromise Detector. This investigation will serve to enhance the usefulness of the ASVAB through identification of persons who had unauthorized, prior access to ASVAB material.

- Survey of First Tour Soldiers in USAREUR. Results of this project indicate that education, proficiency, age and behavior in training were related to soldiers failure to complete their tours while in Europe.

- Evaluation of Early Enlistment Failures under TDP. The objective of this study was to develop a profile of individuals who are selected for early separation under the Army's Trainee Discharge Program. Findings indicated that TDP dischargees as compared with persons who successfully completed training could be characterized as having poorer school relations, as more likely to have been unemployed, have had less supervisory responsibility, less job satisfaction and a reduced sense of personal competence. The work served as a foundation for the Military Applicant Profile.

- Longitudinal Personnnel Inventory. As part of development of an accession cohort data bank, this project is examining the separation experience of various demographic groupings.

- Longitudinal Research on Soldier Adaptation. Findings from this study indicate that attrition prone individuals are those who have low scores on the AFQT, enlisted in the Army to stay out of trouble with the law, were unemployed prior to enlistment, were engaged or married upon entry, and have come from urban areas.

Taken together, the findings and directions of these studies suggest that there are a variety of individual characteristics and background factors linked to Army attrition. Depending upon the final results of these investigations, it might be hypothesized that some or all of the following individual and background factors have a relationship to attrition:

- Reading ability (both general and job-specific abilities).
- Biographical information (high school experiences, self-image, work and disciplinary problem history).
- Education.
- Age.
- Behavior during training.

- AFQT and ASVAB Scores.
- Demographic characteristics (e.g., high school achievement, marital status, employment status at entry, urban/rural background).

Should ongoing research find evidence to support these hypothesized correlates of attrition,[2] such findings would be clearly consistent with attrition research undertaken in other services.

For example, recent research in the Navy (Guthrie, Lakota, & Matlock, 1978) revealed that those sailors discharged prior to the end of their tour were likely:

- To be younger (aged 17 or 18).
- To have one or more dependents.
- To be Caucasian (minorities received fewer discharges, but more less than honorable discharges).
- To be less well educated (those with 10 or less years of education had higher attrition rates).
- To be in the highest mental group category.[3]

It should be noted that these findings are restricted to a cohort of entering recruits (January, 1976) who participated in the Navy's voluntary separation experiment as members of either the experimental or control group. Because of the unique context in which this study took place, caution needs to be exercised in generalizing these findings to the Navy as a whole and to other services.

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[2] We have used the term "correlate" to more precisely indicate the nature of the hypothesized relationships between particular variables and attrition. While the factors outlined above may actually be causally linked to attrition, the nature of the research designs employed in these studies precludes strong statements regarding causality.

[3] This finding was unexpected. However, it may be that those persons with the highest ability were more likely to leave of their own volition (assuming that they were given the voluntary separation option).

A number of other investigations are currently underway in the Navy that have focused on screening and initial assignment issues. These efforts include:

- Screening/Selection--This effort is designed to enhance odds for effectiveness screening predictions (based upon years of schooling, mental group, age, number of dependents) with non-cognitive, biographical variables.

- CLASP (Classification and Assignment with Pride)--This investigation is focused on developing an optimal job match for the individual using a computerized assignment model. Additional objectives of the effort are concerned with predicting attrition on the basis of deficiencies in the person-job match and on the basis of pre-assignment fleet time.

Research in the Marines (Sims, 1977) suggests that using a profile based upon educational level, age at enlistment and a composite of ASVAB items permits significant (r^2 = .104) prediction of attrition through the first fourteen months of service. In addition, Matthews (1977) recently found that a psychological battery testing interests in military service, a nonverbal test of reasoning ability, as well as age at entry, race and education were significant correlates of attrition during Marine recruit training.

In the Air Force attempts have recently been made (Guinn, Kantor, & Vitola, 1978) to develop an adaptability screening instrument using aptitudinal, biographic and inventory information. Using a sample of more than 12,000 airmen, investigators found that the most economical composite (i.e. economical in terms of minimum number of items) were able to account for 22% and 24% of the predicted variance in early attrition. A drawback of this composite device is that it screens out 11% of the population that would have successfully completed the first enlistment.

All in all, research on individual difference variables as correlates of attrition has evidenced a high degree of consistency across specific research efforts and even across services. In broad terms, these findings suggest that individual difference variables can account for approximately 10 to 25% of the variance in attrition (based upon predicting individual discharges).

Implications for Attrition Management Policy

Work on individual difference variables in attrition points to the notion that individual soldiers bring with them certain characteristics and behavior patterns that lead (directly or indirectly) to an early discharge.

If the foregoing statement is correct, it would appear that existing research on individual difference variables may be applied to manage attrition in two major ways:

1) Research findings and predictive tools may be used to influence the Army's accession policies, i.e. through the development of new or revised tests and/or altered entrance standards.

2) Predictive devices may be used for early identification of persons to be included in remediation programs (although care needs to be taken to control for the development of self-fulfilling prophecies which are likely to arise in conjunction with remediation programs).

Both of these uses for research assume that a viable approach to managing Army attrition may be based upon altering the nature and mix of enlisted personnel who enter the service (i.e., through screening and recruiting policies) or by changing the behavior of personnel who are evidencing problems (i.e., through remediation programs). While there are practical limits to how effective such policies may be in the face of a declining manpower supply and given constraints of training technology, these two areas deserve further exploration in R&D activities. More specific suggestions for such activity are outlined in the final chapter of this report.

HYPOTHESIS THAT CAUSES OF ATTRITION RESIDE IN ORGANIZATION POLICY AND PRACTICE

Beginning in 1975, the R&D community began to place more emphasis upon research that might increase understanding of how organizational conditions influence attrition. In part, this avenue of research was initiated because of the conceptual and statistical limitations inherent in screening research. That is, research shows that only a limited proportion of the variance associated with attrition can be accounted for with individual difference variables useful for screening purposes. Questions stimulated as a result of the Conference on First Term Enlisted Attrition (Sinaiko, 1977b) also added impetus to research on organizational determinants of attrition (particularly in the Navy).

It should be recognized that research on the attrition impact of organizational policies and practices has been limited by 1) the lack of readily accessible data bases measuring organizational policy and practice variables and by 2) limitations inherent in the developing discipline of organizational science (see Roberts & Hulin, 1978). Thus, research in this area has had to develop from a near-zero starting point in terms of conceptualizing organizational variables relevant to attrition. [4]

Relevant Recent and Ongoing Research

At the present time, a number of efforts have been completed or are currently underway in the Army that may be characterized as focusing on organizational determinants of early personnel loss:

Post-Training Enlisted Attrition. This project encompassed qualitative data gathering among late first tour enlisted personnel, their immediate supervisors and unit commanders. Findings suggest that a variety of organizational conditions decrease the "attachment" of enlisted personnel including:

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[4]There has been a significant body of research in the civilian sector devoted to defining organizational factors in turnover (for example, see Porter & Steers, 1973). Civilian turnover, however, is actually a voluntary form of attrition; military attrition may be viewed as consisting in part of voluntary attrition and in part of involuntary loss.

- poor quality of personal lifestyle and living conditions,
- lack of meaningfulness, variety and control of work,
- an organizational climate characterized by inadequate feedback, inequity in rewards and punishments, and the
- Disconfirmation of early expectations concerning the quality of Army life and work.

In addition, findings suggested that unit managers deal with problem personnel in different ways and that these differing strategies lead to varying unit EDP attrition rates. In general members of the chain of command do not view discharges as a problem, rather early discharges are seen as a tool for delimiting unit personnel problems and for maximizing unit effectiveness (i.e., unit commanders opt for fewer, more productive personnel).

Organizational Factors Influencing Attrition. The objective of this project is to examine a number of organizational climate factors and work related factors that may be related to unit attrition within sixty battalions within CONUS. The data include surveys of enlisted personnel, of officers and NCO's as well as unit record information.

Leadership Factors in Enlisted Attrition. This study is focused on the impact of leadership behaviors and leaders' characteristics upon attrition during Advanced Individual Training. This work will eventually impact on leadership training and assessment activities.

Role of MOS Mismatch in First Tour Attrition. The aim of this investigation is to ascertain the effect of an MOS mismatch on attrition of men and women. This study will provide information on one facet of the linkage between career progression policy and attrition.

Longitudinal Personnel Inventory. This effort will focus in part on the examination of career field and MOS data within a longitudinal accession cohort data base. MOS analyses from this data set will provide the potential to examine the linkage between occupational experiences and early separation.

Adjustment to First Full-Time Job. This study entails in-depth interviews with soldiers at various points in the first tour. The focus of data gathering is on expectations of enlisted personnel.

Longitudinal Research on Soldier Adaptation. As part of a multiyear longitudinal study, this investigation is focused on predicting losses from a cohort of personnel who enlisted in 1974. This data base includes information on pre-service expectations, leadership climate, peer relationships, motivation for enlistment and satisfaction with the Army.

In addition to these studies conducted by ARI, two studies are now underway with funding from the Office of the Secretary of Defense to examine differences in attrition among Army units. One effort entails secondary data analysis of cohort data files, using unit separation information as a means of compiling information on differences in unit attrition rates. The second study involves a survey of company and battalion commanders among units varying in attrition rates and in personnel quality.

In the aggregate, the findings and hypothesis-generating activities from these efforts in the Army point to a number of organizational factors that may be hypothosized as playing a role in attrition, including:

- Working conditions (job meaningfulness, variety of work, control over work).
- Quality of lifestyle and living conditions.
- Organizational climate (adequacy of feedback, equity in allocation of rewards and punishment, efficiency of organization).
- Disconfirmed expectations of military life.
- Mismatch between training and job assignment.
- Leader characteristics and behavior.
- Command discretion in the use of discharges and other resources for coping with problem personnel.

Investigations in the other services have focused on the variables outlined above as well as a number of organizational factors that have not as yet been evaluated in the Army. In general terms, the Navy and the Marines have focused their efforts on 1) carrying out descriptive studies of attrition-inducing organizational factors and 2) conducting administrative experiments in which key policy and organizational factors are experimentally manipulated to develop new attrition management mechanisms. At this writing the Air Force only appears to have undertaken descriptive studies of organizational factors involved in attrition.

In the Navy several experiments and studies are now underway. One major study, JOBS (Job Oriented Basic Skills) is directed at identifying and preparing otherwise unprepared sailors for A-school. The project entails a policy experiment in which a number of parameters are varied: 1) whether indviduals received JOBS training immediately after recruit training or after fleet experience, 2) whether or not recruits receive JOBS training.

Several conditions will be established for all participants in the study. First, ASVAB score requirements for entering A-school will be waived. Second, participants in the JOBS study will be offered a contract for subsequent training, contingent upon acceptable levels of performance.

The research will examine program as well as individual variables as predictors of attrition.

A second major experimental effort, the General Detail Study (GENDET) was initiated in April, 1979 and is directed at 1) examining the impact of alternative recruiting messages upon attrition of General Detail sailors, 2) estimating the effects of alternate forms of apprenticeship training on losses, 3) determining the effects of alternate lengths of enlistment and 4) examining the predictive power of biographic, performance and exit data for understanding attrition in the context of GENDET interventions.

In addition to experimental work, the Navy has also funded descriptive research focused on organizational determinants of attrition. For example, in structured surveys of first-term separatees and non-separatees in the Navy and in the Marine Corps, Greenberg, Murphy, & McConegly (1977) found that separatees believed that a major cause of attrition is supervisory behavior (including harassment, frequent criticism, and favoritism), particularly among NCOs. Results of this investigation also indicated that regimentation and the lack of an effective means of expressing complaints about supervisors also contributed to early discharges. Finally, family problems were seen as a significant cause of attrition.

Other descriptive studies in the Navy include a longitudinal effort currently being conducted by the Navy Personnel Research and Development Center (cf. Landau, Somer, & Lau, 1978). Because of the time-dependent nature of findings from this study, we have described this investigation in more detailed fashion under a section concerned with the "Hypothesis that Attrition at Different Points in Time is a Function of Different Factors and Conditions."

A recent longitudinal questionnaire study of recruit training in the Marine Corps (Mobley, Hand, Baker, & Meglino, 1977) also pointed to a number of organizational factors that appeared to influence attrition. Separating recruits indicated that the major causes for their discharge included: missing family and friends, lack of personal freedom, pressure, and rules and regulations. Additional data on pre-training expectations indicated that compared to graduates, those persons who received discharges during training began training with lower expectations of completing their enlistments, were less attracted to a "Marine Corps role," expected less leadership structure and expected to be less satisfied. It was also found that persons who were discharged felt that they had a better chance of finding an acceptable civilian job.

Following up these findings, Mobley et al have extended their work in the Marines to encompass an administrative experiment (PIRATE) involving a realistic job preview. The aim of this experiment is to reduce the potential for unrealistic expectations among recruits and thereby limit the possibility of subsequent disappointment with, and withdrawal from, the organization.

Based upon concerns regarding unit differences in attrition, a study will soon get underway in the Marines (to be conducted under the auspices of the Navy Personnel Research and Development Center) to examine attrition inducing variables at the unit level. This analysis will serve to isolate unit-level variables that contribute to high attrition rates and to develop a program for managing attrition at the unit level.

Finally, descriptive research in the Air Force has yielded a picture of several organizational determinants of attrition. In a 1975 study conducted by the Air Force Military Personnel Center of the Minimally Productive/Limited Potential Discharge Program (the Air Force's Marginal Performer Program) revealed that separatees believed that their discharges were caused by job dissatisfaction, supervision, regimentation, "hassles," and personal problems.

Implications for Attrition Management Policy

Existing research on the impact of organizational conditions on attrition suggests that there are two basic mechanisms through which such factors may operate. First, at the individual level, a number of studies indicate that persons who receive early discharges attribute their separation to conditions within the organization including the nature of supervision, the quality of working life and living conditions, and the lack of fit between pre-service expectations and subsequent military experience. These data suggest that a set of organizational and occupational conditions exists which has an adverse impact upon some enlisted personnel and ultimately leads to early discharges.

A second mechanism by which organizational forces may influence attrition appears to operate at the unit level. While less data have been gathered to examine unit management influences on attrition, it is apparent from recent and ongoing research that (1) substantial differences in unit attrition rates exist, and (2) unit commanders have a great deal of discretion in how they manage problem personnel and whether or not they wish to utilize their discharge authority in individual cases.[6]

[6] It is of interest to note that these two mechanisms emerged from research employing somewhat different methodologies. That is, findings concerning organizational factors impacting at the individual level emerged from survey and interview studies of individual enlisted personnel. Findings suggestive of organizational factors operating at the unit management level were derived from interviews with unit commanders and from unit records data. Thus, the source of data in such studies very much influences the potential policy implications that emerge.

Based upon the general directions evident in research on organizational determinants of attrition, it would appear that this work may be applied to manage attrition in (at least) three ways:

1) Findings may be applied to develop programs and policies for alleviating organizational and occupational conditions that have counterproductive effects upon enlisted personnel (e.g., reducing unmet expectations, restructuring jobs to make them more meaningful, elimination of MOS mismatch, etc.)

2) Findings may be utilized for developing line supervisory training programs to address concerns expressed by separatees regarding poor supervision.

3) Research may suggest programs and policies for managing attrition at the unit level through interventions directed at controlling discharge authority available to unit commanders.

Research on organizational determinants of attrition has, as yet, not found its way into policy or programmatic applications such as those outlined above, yet it is clear that such applications are possible and would address those organizational conditions that appear to directly contribute to attrition. Some of the applications noted above (i.e., #2 and #3) are addressed to "gatekeepers"[7] in the system and would be likely to have near term impact on attrition since gatekeepers directly influence the flow of personnel out of the system.

HYPOTHESIS THAT ATTRITION AT DIFFERENT POINTS IN TIME IS A FUNCTION OF DIFFERENT FACTORS AND CONDITIONS

The civilian literature on labor force participation and on personnel turnover suggests that young people undergo frequent job changes between the ages of 17 and 21. Much of this job-changing behavior is a consequence of career choice processes as young people attempt to obtain information about the world of work by "trying out" a variety of jobs. In addition, as young people mature and undergo personal changes (e.g., get married, obtain additional schooling), they more effectively define their occupational interests and career goals.

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[7] The term "gatekeepers" in this context refers to the fact that unit commanders have the authority to approve discharges of personnel from units. In view of this authority, commanders may be seen as gatekeepers who control whether an individual will or will not be removed from the unit.

Recognizing that an individual's view of an organization may change as a result of experience and/or a consequence of personal change, a number of researchers have attempted to examine military attrition in light of a larger career development context. That is, attrition may readily be seen as resulting from a dynamic interaction between the individual and the organization over a period of time. In such a framework, it is reasonable to hypothesize that attrition occurring at different points in time is caused by different factors. Investigators choosing to undertake research within this framework have had to rely upon time-series research methodologies (e.g., cross-sectional and longitudinal designs) which are sensitive to the time-dependent dynamics inherent in individual/organizational relationships.

Relevant Recent and Ongoing Research

A small number of attrition studies have been undertaken or are now in progress in the Army and in other services predicated on the hypothesis that attrition is a result of interaction between individuals and military organizations over time:

- Adjustment to First Full-Time Job. This effort is focused on personnel with 1-3 months of service, six months of service and within six months of the end of service. This cross-sectional design will permit an analysis of work expectations at various points during the first tour.

- Longitudinal Research on Soldier Adaptation. The longitudinal data base established in this project (Goodstadt, Frey & Glickman, 1975) offers the potential to examine organizational and individual factors contributing to attrition at different stages of Army experience. Specific findings indicate that having a negative expectation of service life at entry is associated with attrition (Holz, 1975).

- Post-Training Enlisted Attrition. The results of this investigation suggest that enlisted personnel encounter a great deal of difficulty as they make the developmental transition from training to operational environments. These difficulties often bring on an early discharge (Goodstadt, Yedlin & Romanczuk, 1978, Goodstadt & Nieva, 1978). In addition, findings indicated that persons undergoing discharge processing may be willing to complete their contracts in the reserves.

Findings from these efforts related to time-dependent dynamics in attrition are quite limited at present. However, some of these findings reflect:

- The role of early expectations in subsequent attrition.
- Critical time periods and early experiences influencing attrition.
- Differential attrition trends associated with various personnel characteristics.

A number of relevant investigations have been undertaken in other services, including several longitudinal studies. For example, the Navy currently has underway a longitudinal study entailing a series of attitudinal assessments of an entering group of 4900 first-term male and female personnel (Landau, Somer, & Lau, 1978). At this point in time, analyses have only examined attrition through the end of recruit training.

Data revealed a number of differences between those who separated and those who remained in the service through the end of Boot Camp. Results indicate that those who separated viewed civilian work environments as more attractive, experienced more expectancy disconfirmation concerning Boot Camp and were more likely to expect the "real" Navy to be like a continuation of Boot Camp.

A recent longitudinal study was also undertaken in the Marine Corps (Mobley, Hand, Baker, & Meglino, 1977) to trace individual and organizational correlates of attrition. Findings from this effort suggest that recruit-training separatees view the Marines as less attractive initially, expect less leadership structure, and expect to be less satisfied. Results are not yet available concerning the determinants of post-training attrition.

Implications for Attrition Management Policy

Research on time-dependent influences upon attrition has implications for the timing as well as the content of particular policies and management programs. Bearing in mind that only sketchy reports are currently available concerning ongoing efforts, there appear to be three major ways in which this research can potentially be applied:

1) Research findings could be used to design programs and policies for developing coping skills among enlisted personnel at critical points in the tour (e.g., findings suggest that the first permanent duty assignment is one such critical period during the first tour).

2) Findings may suggest ways of using personnel more effectively so as to amortize early training and recruiting investments (e.g., findings suggest that EDP separatees might readily complete their contracts in the reserves).

3) Trend data encompassed in these studies may have implications for ways to control the extent of attrition during training and post-training periods and the trade-offs inherent in early and late losses.

CHAPTER 5
IMPLICATIONS FOR ATTRITION RESEARCH AND DEVELOPMENT ACTIVITIES

Based upon the research review outlined in Chapter 4, several observations may be made regarding the direction and emphasis of recent attrition R&D in the Army and in the other services:

1) Research on screening devices has progressed to a stage where particular instruments (e.g., Military Applicant Profile) can be implemented for managing attrition in operational contexts.

2) Research on organizational determinants of attrition has largely been exploratory in nature. With the exception of policy experiments currently underway in the Navy and in the Marine Corps[1], work on organizational determinants of attrition has not as yet focused on the development and testing of specific mechanisms for managing attrition.

3) A number of applications of existing research on organizational determinants of attrition are possible. These potential applications provide a basis for further R & D to design and evaluate attrition management strategies.

It is fairly evident that exploratory research in this area has made it possible to pinpoint a number of factors that are linked to or correlated with attrition. However, understanding the causes of attrition does not necessarily lead to a precise definition of policy and programmatic solutions.[2]

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[1] These studies include administrative experiments designed to 1) test a voluntary separation policy in the Navy (Guthrie, Lakota, & Matlock, 1978), 2) evaluate programs to provide job oriented skills, 3) examine the impact of special programs directed at Navy General Detail personnel, and 4) evaluate the experimental use of job previews to provide Marine recruits with more accurate perceptions of service life.

[2] For example, recent research indicates that harassment and inequitable treatment of personnel is "cause" of early discharges. Several directions may be taken to remedy this condition (ranging from NCO training to the introduction of more responsive grievance mechanisms). Unfortunately, exploratory research on causes does not readily permit policymakers to select which of several alternative management remedies is most cost effective. They are subject to management strategy.

Given the increasing concern of policymakers with attrition and its attendant fiscal and manpower costs, researchers do not now have the luxury to dwell exclusively upon exploratory research to identify causal determinants. Thus, in light of the gravity of the attrition "problem", attrition research and development needs to move from a focus on the "causes" of attrition to greater emphasis on defining and evaluating attrition management remedies. In effect, we are recommending that state-of-the-art research on attrition should move in the direction of feasibility testing, demonstration projects, and policy experimentation activities in order to more clearly define policy and program options for attrition management.

The need to take a more action-oriented stance with respect to near-term application of findings, does not imply that future attrition research can be less rigorous. In fact, it is likely that a focus on policy experimentation will require greater rigor as researchers actively attempt to exert experimental rather than statistical control over variables. It is quite clear that the use of policy experiments in this area offers unique insights that can be obtained through no other means. That is, data gathered using non-experimental methodologies can only serve to suggest policy changes that might be introduced, but such methodologies fall short of providing precise prescriptions and convincing rationale for system-wide implementation. In this way, policy experiments actually provide a relatively conservative method for experimentally testing and refining policy concepts on a smaller scale. If policy changes can be shown to be effective on an experimentally limited scale, such information would provide a stronger basis for more widespread implementation.

RECOMMENDATIONS FOR FUTURE ATTRITION R&D

The analysis of recent and ongoing attrition research presented in Chapter 4 suggested eight areas in which research findings might be applied to bring about more effective management of attrition:

1. Attrition prediction tools may be applied to influence the Army's accession policies.
2. Predictive devices may be used for early identification of soldiers to be assigned to remediation programs.

3. Findings from studies of organizational factors in attrition may be used to develop programs and policies for alleviating conditions having counterproductive effects upon personnel.
4. Findings from research may be utilized for developing training programs for line supervisors.
5. Research may suggest interventions directed at controlling discharge authority and/or resources available to unit commanders.
6. Available research evidence may be used to design programs for developing coping skills among enlisted personnel at critical junctures in the first enlistment.
7. Findings from ongoing and recently completed research may suggest ways of amortizing training and recruiting investments through more effective use and assignment of personnel.
8. Research may suggest ways of controlling the timing of attrition and the tradeoffs inherent in attrition at different points in the first enlistment.

In order for this research to bear fruit, it would appear that additional R&D investments need to be made in targeted fashion. That is, research needs to move in directions that will yield specific program or policy outcomes. Along these lines, we recommend that a number of specific programs and policies serve as the focus of research attention and that research advance by stages to develop knowledge for use by policymakers in implementing an overall attrition management strategy.

Our operating assumption is that no one program or policy will be sufficient to effectively manage attrition; attrition is a systems problem that requires a systems solution. As a result, it is likely that the implementation of a number of different programs and policies will be required to address the multifaceted nature of attrition and its causes. With such a perspective in mind, we have organized our research recommendations in two sections. The first section outlines research required for developing techniques to manage attrition in the relatively near future. The second section concerns research devoted to the long-term development of attrition management procedures.

The distinction drawn between near-term and long-term development is not meant to imply a priority ordering of research efforts, rather we have defined near-term R&D as focusing upon those procedures that require relatively less exploratory development research and a shorter lead time to achieve implementation.

That is, there are some things we now know about attrition that can be applied to manage the problem. Other aspects of the attrition phenomena require additional exploratory research effort and thus necessitate a longer gestation period between research and program/policy implementation. Given the longer lead time required for these latter efforts, long-term R&D initiatives should get underway in the relatively near future.

R&D to Develop Near Term Attrition Management Techniques

Growing concerns over manpower losses associated with attrition prompts the need for investment in some near-term remedies that will quickly reduce losses. Along these lines, recently completed and ongoing research suggests a number of mechanisms and programs that might be developed to meet this need:

1) Programs to provide early identification of attrition-prone individuals to permit timely participation in remedial programs.

2) The development of training programs focused on attrition-inducing leadership practices.

3) The development of unit level attrition management programs designed to reduce reliance upon discharges as a solution to personnel problems.

4) The design of programs to provide first-term enlisted personnel with adequate coping skills to meet the demands of the first permanent assignment.

Early Identification of Personnel for Remedial Programs

One approach to addressing attrition-inducing personnel problems would be to provide timely remedial programs for those persons who appear to have problems adapting to the service. Such programs could be targeted to persons who are most likely to experience such difficulties. Since ARI has already completed considerable work on screening instruments, this earlier research could be applied with relative ease to the task of identifying personnel who might participate in remedial programs. While early identification of "problem" personnel is both possible and desirable, care needs to be taken to avoid labeling and the induction of self-fulfilling prophecies that might themselves contribute to early discharges. In addition it might be advisable to explore other alternatives for early identification of program participants. Such identification mechanisms might include supervisory ratings, disciplinary records, etc.

To develop this program, however, greater emphasis needs to be placed upon the content and delivery of the remedial programs themselves rather than upon predictive tools for personnel identification. The following R&D efforts would be needed to build a program in this area:

1) A feasibility study needs to be undertaken to define curriculum needs and to determine the most effective delivery system for remedial programs.

2) A training curriculum would next be devised along with a set of specific behavioral objectives.

3) Selection devices and/or supervisory rating procedures would need to be examined to empirically determine which of the available devices would be most suitable for use in conjunction with a remedial program.

4) A pilot test of the curriculum would then need to be undertaken in a small number of sites (1 or 2 installations). This test should involve formative and summative evaluation of the program to refine the curriculum and to determine whether an optimal group of participants had been selected (i.e., optimal would be defined as those who presented the greatest risk of discharge, but for whom the program could be beneficial).

5) The program and selection instruments would then be implemented on a broad basis for operational use and for long-range monitoring of impact on attrition outcomes.

Training to Counter Attrition-Inducing Leadership Practices

Certain aspects of supervisory behavior (during training as well as during assignment) appear to play a critical role in inducing attrition from both training and operational units. For example, an ongoing study in training units will serve to pinpoint attrition-inducing supervisory practices that are manifested by training cadre. Recently completed research on organizational factors inducing post-training attrition suggests that inequitable administration of rewards and punishments is related to attrition among first term personnel in operational units as well.

Given the existence of such practices in both training and operational units, efforts are needed to develop programs to counter dysfunctional supervisory behaviors. Along these lines, training programs could be developed for supervisory personnel at various levels (e.g. NCO's, Company level officers).

These programs would serve to:

1) Pinpoint dysfunctional supervisory practices and make explicit the attrition consequences of such behavior.

2) Provide alternative behaviors for more effective management of personnel.

Such training programs could be developed for training staff as well as supervisors in operational units. The content of programs would be varied somewhat to take into account the supervisory context.

To develop such programs and implement them in sufficiently broad-based fashion to induce significant impact on attrition, the following R&D efforts would be needed:

1) A curriculum development effort would be requirement to design behavioral objectives, training content and a training delivery system. Information concerning training needs could be gleaned from recent attrition research.

2) A pretest of the curriculum would need to be undertaken on a small scale to determine whether NCOs would accept the program and whether the training could demonstrate behavioral impact. Both formative and summative evaluation techniques should be utilized in such a pilot test.

3) To the extent that the program could be shown to produce changes in supervisory behavior, a pilot test of the curriculum would need to be undertaken. That is, the program is designed to produce behavioral changes in supervision; the ultimate aim of these efforts would be to bring about changes in attrition. The pilot test would serve to evaluate attrition impact of the program and would require implementation of the program at a small number of sites over a period of time long enough to produce sufficient evidence of impact.

4) Based upon the results of the pilot effort, wider implementation and evaluation of the program would take place. The aim of this evaluation would be to monitor the impact of the program to diagnose problems and to track progress in terms of reducing attrition.

Programs to Influence Unit-Level Management

The existence of substantial variation in unit attrition rates (as attested to by data from DMDC) and recent findings from research on post-training attrition suggests that one avenue for managing attrition might take place through influence applied at the unit (i.e. battalion) level.

The development of programmatic efforts in this area needs to be directed at influencing the discharge decisionmaking of gatekeepers--battalion and company commanders, who make decisions that influence the attrition of personnel from units.

Several R&D efforts are needed in this area to obtain information upon which unit-level attrition management policies and programs might be developed. A prerequisite for all of these efforts is that unit attrition information be monitored and fed back to unit commanders. At the present time, commanders have little or no idea as to how much attrition they are incurring. In the absence of such information, it is all but impossible for units to manage their attrition. Among the research efforts needed in this area are the following:

1) Research is needed to develop constructive alternatives to discharges. At present, unit commanders do not believe that they have sufficient resources to effectively deal with "problem" personnel. Therefore, research directed at the development of additional management resources short of discharges, would probably serve to reduce the number of discharges that are granted. The results of this effort should also be subjected to policy experimentation in a small number of units. Such experiments would serve to empirically evaluate the effectiveness of constructive alternatives and provide a basis for broad-based application.

2) Research is needed to determine the most effective method for increasing unit accountability for attrition. This research should specify what means are used for maintaining accountability (i.e., using attrition information to evaluate units, tying attrition information into commander ratings, etc.), and at what level in the hierarchy accountability mechanisms need to be applied (e.g., company, battalion, or brigade level). This preliminary research should then be developed into policy experiments in which the utility of different accountability mechanisms are evaluated.

3) Administrative experiments should be undertaken to see if making discharges less useful as a management tool would decrease its use. This could be done by increasing the length of time for replacements, requiring quid-pro-quo for replacements granted and so on. In effect, administrative experiments could serve to assess the organizational impact of making discharges more costly for the unit. To the extent that such experiments show that attrition rates are reduced and that organizational effectiveness is not compromised, such policies could be implemented on a wider scale to bring about systemwide impact on attrition.

Training to Provide Soldiers with Additional Coping Skills

There is a body of research indicating that the transition from training to an operational environment is quite stressful for young soldiers. In fact, the nature of the individual's adjustment during this transition period appears to be quite critical to the recruit's ultimate survival in or attrition from the Army (Berry & Nelson, 1966; Glickman, 1961; Glickman, Goodstadt, Korman & Romanczuk, 1973). To counter the stress evoked during this period, special programs need to be developed to provide soldiers with coping skills to enhance the likelihood of their "survival" through the transition period.

One such program would be a Transition Training Program (TTP) to give soldiers necessary information and personal management skills to ease their adjustment to a new work environment. This program would provide young soldiers with financial management skills, information on community resources and facilities, housing information and a variety of other information that would ease the problems of transitional adaptation. This program would focus on the point at which soldiers report to their first duty assignment at a given installation and would be implemented on an installation-by-installation basis. While such a program might be valuable for all personnel, it is evident from recent research (Goodstadt, Yedlin & Romanczuk, 1978) that young married personnel have the greatest need for this type of training.

The following R&D efforts are needed to develop and implement the Transition Training Program:

1) Research is needed to test the feasibility of the TTP concept and to define curriculum requirements and objectives. This effort would also serve to define support requirements for implementation at a single installation.

2) A pilot test of TTP would next be undertaken to carry out formative and summative evaluations. Program effects should be tracked for at least six months at a small number of installations. Both control and experimental groups (i.e., soldiers receiving TTP) should be observed over this period.

3) TTP should next be implemented on a broader scale to determine the program's generalizability and to move toward institutionalization. Throughout the implementation, program effects should be monitored to determine whether installation-specific revisions are required.

R&D to Develop Long-Term Attrition Management Policies and Procedures

The near-term research efforts outlined above represent attempts to move rapidly from existing/ongoing research to application. The cost of near-term application, however, may be manifested in fairly restricted analysis of solutions and reduced capability to address the underlying factors contributing to the attrition problem.

To bolster manpower policy in ways that take into consideration the fundamental causes of attrition, a long-term attrition research strategy is needed. Such a strategy must be addressed to accession policy, to organizational practices, and to retention policies. While near-term concerns are focused on the need for manpower conservation, long-run management of attrition needs to focus on optimal retention (i.e., retention of the most qualified and motivated personnel). That is, present policies have moved in the direction of correcting excessive losses; yet, excessive retention also creates problems. Clearly, a balanced approach to attrition is ultimately required.

With the objective of developing a long-term attrition management strategy, our review of recent and ongoing research suggested four areas that need to be more comprehensively investigated:

1) Research is needed to define more optimal accession policies, including innovations in recruiting and screening procedures. These procedures would change the mix of personnel and thereby alter the attrition rate.

2) Research is needed to develop means for alleviating organizational and occupational conditions that lead to attrition.

3) Potential mechanisms for "amortizing" training and recruiting investments need to be examined.

4) Research on the timing inherent in retention/discharge policies is needed to define a more optimal timetable for attrition.

More detailed discussion of research in these areas is presented below.

Research to Develop More Optimal Accession Policies

In the face of a declining pool of eligible males, more optimal approaches to screening and recruiting are needed to (1) meet the accession requirements of the '80s, and (2) reduce attrition among entering cohorts. These twin objectives are difficult to achieve; however, there are several avenues of approach for addressing these concerns. First, the Army can attempt to identify untapped segments of the population that represent highly qualified personnel (e.g., community college students, women). Second, an attempt can be made to more effectively define recruiter allocation in terms of attrition potential. Third, new screening devices will need to be developed for use with previously untapped segments of the manpower pool.

The three approaches outlined above are predicated on the assumption that recruiting may be treated as a marketing problem. Thus, it assumes that the total manpower pool has not been exhausted of its recruiting potential. For example, recruiter allocation has largely been based upon yield of past efforts; such approaches may not be sufficiently sensitive to address changing demography and population distributions.

To define more optimal accession policies from an attrition perspective, the following R&D efforts are needed:

1) A national recruiting data base needs to be established using demographic, attitudinal, and qualification information (such data bases may already be available from the National Longitudinal Study[3] or other data sets). This data could be examined to define optimal segments of the population based upon qualifications, schooling, geographical location and perceptions of the military. An additional criterion for defining segments would be the likelihood of attrition (based upon already completed screening studies). While optimal segments would likely be quite small, they would have low attrition rates and therefore would reduce the overall attrition rate of a given entering cohort.

2) Based upon segment identification, recruiting strategies would need to be revised to attract members of optimal segments. Such strategies might include the development and testing of non-financial incentives and appeals. In addition, research could be used to estimate the effectiveness of various recruitment policy changes (e.g., such as lateral entry programs or two year enlistments that might enhance the attractiveness of the military for highly qualified segments of the eligible pool).

[3]NLS is a ten year study of labor force participation funded by the U.S. Department of Labor.

3) Market tests would then be carried out to test recruiting incentives and appeals and to evaluate alternative recruiter allocation programs (directed at new geographic distributions of eligible personnel). These market tests would entail actual changes in policy implemented in particular markets (i.e., SMSA's) to determine their effectiveness. Recent work in the Navy suggests that recruiting managers may now be willing to consider such experimentation.

4) Assuming that the 1980's will bring a new mix of personnel into the Army, research is needed to develop and/or to revise screening devices and training for use with future accession cohorts. To the extent that the nature of future cohorts can be forecast, screening tools and new training programs should be validated on appropriate segments found in current accession cohorts.

Research to Address Organizational/Occupational Conditions Leading to Attrition

Recent research suggests that there are a number of organizational and occupational conditions within the Army environment that drive the attrition rate. Among these factors are the following:

- Pre-service expectations are inaccurate and misleading .
- Army jobs lack variety and job challenge.
- Work loads vary tremendously from one time period to another, making personal planning quite difficult.
- Living conditions off-post are expensive and difficult to obtain for married personnel.
- Job mobility is limited and the personnel system is inflexible; individuals cannot easily change career fields to develop a better position for themselves in the service.

Although the problems outlined above feed disillusionment and this contributes to attrition, the percent of this contribution is unknown. Therefore, to gain more understanding of these problems, R&D efforts are needed, including the following:

1) Investigations are needed to determine the relative incidence of these problems and the frequency of their association with attrition. In effect, there is need to define what portion of the variance is controlled by the factors outlined.

2) Based upon the results from 1), feasibility studies need to be carried out to examine possible approaches for addressing the most serious problem areas.

3) Promising solutions need to be tested in small-scale pilot experiments.

4) Successful approaches then need to be tested on a broader scale prior to institutionalization. Tracking and monitoring procedures should be introduced to diagnose weaknesses and limits in new policies and programs.

Research to Examine "Amortization" Mechanisms

By the time an individual has completed basic and advanced training, the service has already made a considerable investment in recruiting and training. Accordingly, the loss of persons who have completed training is quite costly to the organization. To the extent that such costs can be "amortized" or gradually spread across a number of organizational functions, the costs of attrition can be reduced. For example, if one were to permit individuals receiving early discharges to complete their obligation in the reserves, the overall cost of attrition could be lessened since such persons would have received their training in the Regular Army. Other such "amortization" mechanisms may be available for use by the Army and research is needed to identify and subsequently test the feasibility of such options. It should be noted that this section is devoted to different strategies for controlling the costs of attrition, rather than upon managing attrition directly. Accordingly a number of R&D efforts might be undertaken to develop and test "amortization" mechanisms:

1) A small-scale exploratory research study might be undertaken to pinpoint different sorts of "amortization" mechanisms. A useful approach to such a study might entail brainstorming efforts in which a group of policymakers and researchers are convened to explore different "amortization" mechanisms.

2) Using the output of the exploratory step, feasibility studies could be undertaken to define potential interest and/or resistance of various parties that play a role in the area under scrutiny. This work would also serve to pinpoint costs and supporting requirements for field-testing of mechanisms.

3) To the extent possible, small-scale testing should be undertaken to experimentally evaluate recommendations developed from feasibility testing.

4) Large scale testing and implementation should next take place. Monitoring of the programs should be undertaken prior to institutionalizing the mechanisms and finalizing all procedures and logistics.

Research to Define a More Optimal Attrition Timetable

There is sufficient research evidence to suggest that attrition may logically be viewed as the outcome of continuing interaction between an individual and a military organization. As a result, it might be anticipated that attrition out of cohort evidences a number of developmental time-series characteristics (including lag effects, critical periods, and significant impacts of early experiences upon subsequent behaviors). From the perspective of attrition management, the time-series character of attrition suggests that consideration needs to be given to the interrelationships between different programs (e.g., BCT, AIT, etc.), and policies that impact on individuals at different points in the first tour. For example, the operations of TDP and EDP cannot be viewed simply as independent events; discharging individuals under TDP authority may not reduce a cohort's overall attrition rate or even the EDP discharge rate since policies and criteria are applied differently in training and in the unit (in effect, different people may be discharged under TDP and EDP).

Another implication of the time-dependent nature of attrition relates to cost considerations. Thus, the cost of discharging individuals early in the tour are quite different from the costs of late tour attrition. Accordingly, there is need to manage the timing of attrition.

This perspective on the problem suggests the need for research to take a life-cycle approach to understanding causal factors in attrition and its management. At this time, researchers do not have much knowledge about the factors that influence attrition at various points in time, nor is there much information on how to go about managing attrition timing.

With these gaps in knowledge in mind, longitudinal research is needed to master the intricacies of differential influence of attrition at different points in a cohort's life cycle. The assumption that attrition results from time-dependent interactions between individuals and organizations suggests that two elements of variation need to be considered in longitudinal studies: 1) changes in individuals over time, and 2) changes within and across military units. To examine the time-dependent nature of attrition, a number of R&D efforts are needed:

1) Panel studies of individual soldiers should be carried out. These studies should entail measurements of organizational perceptions and experiences of the individual across different points in the first tour and across different organizational units.

2) Tracking studies of training and operational units should be undertaken. These studies should entail measurement of unit attrition, management practices, resources, costs, missions, and changes in command over time. In the case of training units, graduates should be tracked to determine the long-term impact of training upon subsequent attrition.

3) An important study in this area should focus on the relationship between TDP and EDP losses. That is, efforts should be made to experimentally control TDP and then observe the subsequent impact on the number and nature of EDP losses.

4) Based upon the findings in 1), 2), and 3), programmatic and policy changes should be implemented and tested in small-scale administrative experiments. Findings from 1) should yield information for experimentation to be undertaken with respect to Army-wide or Major Command-wide programs and policies. Findings from 2) should provide insights for undertaking experiments involving unit-level management.

5) Findings from small-scale experiments should be used for implementation of policy and programmatic changes on a broader scale.

Taken together, the efforts outlined above should point the way to the development of more sophisticated time-dependent (and cost-conscious) methods for managing attrition on both an Army-wide basis and at the unit level.

SUMMARY

At the beginning of this chapter we presented several observations concerning the state-of-the-art in military attrition research. These observations included the recommendation that additional application of behavioral science research findings be made in order to more effectively manage attrition and its costs. Such application requires additional research efforts to develop and organize knowledge in a way that can be utilized by policymakers. With this perspective in mind, we have briefly outlined eight major areas for R&D investment which we believe will serve to advance the state-of-the-art in a way that will contribute to more effective attrition management.

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